This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 were previously canceled.

Claim 6 (currently amended): A method for determining an amplitude and phase angle of a measuring signal corresponding to a current or a voltage on an electrical power supply network by using sampled values of the measuring signal, the method comprising the steps of:

using a model of the measuring signal containing a sinusoidal component in accordance with a relationship $y = A \cdot \sin\left(2\pi \sum_{i=0}^{n} (f^{(i)} t^i) t + \varphi\right)$ with $f^{(i)}$ designating an ith order time derivative of the frequency and modeling a change in the frequency over time, and various orders of the time derivative of the frequency being taken into account by selecting an variable n, ~~$y = A \cdot \sin(2\pi ft + \varphi)$~~, with y designating an instantaneous value of the model of the measuring signal, A designating a model amplitude parameter of the measuring signal, f designating a model frequency parameter of the measuring signal, φ designating a model phase angle parameter of the measuring signal and t designating time; and

using both the model of the measuring signal and the sampled values, via a recursive nonlinear least-squares estimation method, to determine the model frequency parameter of the measuring signal by the estimation together with the model amplitude parameter and the model phase angle parameter.

Claim 7 (previously amended): A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 6, wherein use is made of a model of the measuring signal in accordance with a relationship $y = A \cdot \sin(2\pi ft + \varphi) + d$, with d modeling a DC component of the measuring signal.

Claim 8 (canceled).

Claim 9 (previously amended): A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 7, wherein use is made of a model of the measuring signal in accordance with a relationship $y = A \cdot \sin\left(2\pi \sum_{i=0}^{n} (f^{(i)} t^i) t + \varphi\right) + d$, with $f^{(i)}$ designating an ith time derivative of the frequency and modeling a change in the frequency over time, and various orders of the time derivative of the frequency being taken into account by selecting a variable n.

Claim 10 (previously amended): A method for determining an amplitude and phase angle of a measuring signal as claimed in claim 6, wherein the determined model amplitude parameter, the determined model phase angle parameter and the determined model frequency parameter determined by the estimation method are output as resulting values only when an estimation error is less than a smallest permitted estimation error.